



MISSOURI

TECHNOLOGY

2009

CORPORATION

The logo features the word "MISSOURI" in a white serif font above the word "TECHNOLOGY" in a large, bold, white sans-serif font. Below "TECHNOLOGY" is the year "2009" in a large, bold, white sans-serif font. To the right of "TECHNOLOGY" is a blue circular graphic consisting of three concentric arcs. A thin blue wavy line connects the top of the "T" in "TECHNOLOGY" to the top arc of the circle.



2009 Annual Report

Prepared for:

The Honorable Jeremiah W. (Jay) Nixon, Governor

The Honorable Ron Richard, Speaker
Missouri House of Representatives

The Honorable Charlie Shields, President Pro Tem
Missouri Senate

Missouri Technology Corporation
Jefferson City, Missouri

November 1, 2009



Jeremiah W. (Jay) Nixon
Governor

Joseph G. Bannister
Chair

November 1, 2009

The Honorable Jeremiah W. (Jay) Nixon
Office of the Governor
State Capitol, Room 216
Jefferson City, Missouri 65101

The Honorable Ron Richard, Speaker
Missouri House of Representatives
State Capitol, Room 308A
Jefferson City, Missouri 65101

The Honorable Charlie Shields
President Pro Tem
Missouri Senate
State Capitol, Room 326
Jefferson City, Missouri 65101

Dear Governor Nixon, Speaker Richard and President Pro Tem Shields:

As required by state law in section 348.256 (6) RSMo, I am hereby submitting the Missouri Technology Corporation's 2009 Annual Report. The Missouri Technology Corporation's Board of Directors approved the report at its meeting held on October 26, 2009. We believe the report is a fair and accurate description of the structure, operations and financial status of the MTC.

Please contact us should you require more information about the Missouri Technology Corporation or its role in helping Missouri's economy prosper through the better development and use of technologies.

Very truly yours,
Joseph G. Bannister

Joseph G. Bannister
Chair

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Introduction

This 2009 Annual Report of the Missouri Technology Corporation (MTC) is written in response to the legal mandate contained in Section 348.256(6) RSMo, which states:

"The corporation shall submit an annual report to the governor and to the Missouri general assembly. The report shall be due on the first day of November for each year and shall include detailed information on the structure, operation and financial status of the corporation. The corporation shall conduct an annual public hearing to receive comments from interested parties regarding the report, and notice of the hearing shall be given at least fourteen days prior to the hearing."

In order to comply with the law, the MTC report is due to be completed and submitted to the Governor, the Senate President Pro Tem, and the Speaker of the House on November 1, 2009. MTC conducted the annual public hearing on October 26, 2009, in order to receive comments from interested parties regarding the work of the organization in the past year.

MTC's Legislative Mandate

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The Missouri Technology Corporation (MTC) is a private not-for-profit corporation established pursuant to Sections 348.251 to 348.266 of the RSMo and subject to the provisions of Chapter 355, RSMo. The purpose of the MTC is to help strengthen the economy of the state through the development of science and technology; to promote the modernization of Missouri businesses by supporting the transfer of science, technology and quality improvement by providing leadership in the establishment of methods of technology application, technology commercialization and technology development.

In accomplishing its goals, the MTC has broad powers that allow for a wide range of activities that enhance research and development, technology transfer and commercialization. For example:

- The MTC is able to assist in establishing cooperative associations of universities and private enterprises in Missouri for the purpose of coordinating research and development programs.
- The MTC can establish a statewide business modernization network to assist Missouri businesses in identifying ways to enhance productivity and market competitiveness.
- The MTC can specify areas where scientific research and technological investigation will contribute to the improvement of productivity of Missouri manufacturers and identify scientific and technological problems and opportunities related to the economy of Missouri and formulate proposals to overcome those problems.
- It can also make direct seed capital or venture capital investments in Missouri business investment funds or businesses that demonstrate the promise of growth or job creation.

MTC Progress Report / Lewis and Clark Discovery Initiative

MTC Progress Report

During 2009, Missouri Technology Corporation (MTC) continued its leadership role in the development, implementation and administration of some of Missouri's most significant technology programs and initiatives. Among those were the Lewis and Clark Discovery Initiative and the Missouri Life Sciences Research Trust Fund. MTC also continued to oversee the operations of ten Missouri Innovation Centers and worked closely with the University of Missouri and the Missouri Federal and State Technology program. The MTC received an appropriation of \$2.5 million for the planning and development of the Missouri Plant Science Center in Mexico, Missouri.

Lewis and Clark Discovery Initiative Update

Signed into law in May of 2007, the Lewis & Clark Discovery Initiative (LCDI) provided Missouri's colleges and universities with funding for facility and infrastructure improvements. In addition to these funds targeted toward research and education, \$15 million was directed to the MTC for various programs designed to improve commercialization of Missouri technologies.

The funds are focused on three main areas of need: (1) improving collaboration between public and private sector research institutions; (2) facilitating technology commercialization at all phases; and (3) enhancing technology company recruitment efforts. MTC utilizes these funds to work with the state's research institutions, industry, technology commercialization service providers and capital investors to maximize the opportunities created by Missouri research.

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Animal Health and Nutrition Center

MTC grant funds were used to conduct a study to determine the feasibility of establishing an Animal Health and Nutrition Center in the Kansas City, Missouri region. MTC awarded \$200,000 to the Kansas City Area Life Sciences Institute, Inc. (KCALSI) to provide for the planning of this project. KCALSI engaged Brakke Consulting Group from Dallas, Texas to determine the feasibility of establishing a Center for Animal Health and Nutrition Research (Center) within the Kansas City Animal Health Corridor. Brakke Consulting recommended establishing a Center that offers fee-generating information and laboratory services to help underwrite the Center's Research. Research would start in a knowledge-heavy field like genomics or comparative medicine and expand to more traditional bench research. The Phase I report was presented to the MTC Board in the fall of 2008. A Phase II study was conducted to develop a mission for the Center, determine space and staffing needs and to outline an operational budget. The Phase II report was presented to the MTC Board in April 2009.

Grant Award Recipient: Kansas City Area Life Sciences Institute, Inc.

Amount of Grant Award: Phase I grant totaling \$100,000 and Phase II grant totaling \$100,000. All funds have been awarded for Phase I.

Award Date: Grant for Phase I executed on June 20, 2008. Grant for Phase II executed on December 11, 2008.

Animal Health Workforce Development Initiative

A public-private coalition comprised of Missouri Western State University (MWSU) and leading companies in the St. Joseph area received a grant from the MTC to create a GXP regulated training laboratory that will help ensure the region's animal health and nutrition industry continues to have access to a highly skilled workforce. The term "GXP" refers to Good Manufacturing Practices (GMP), Good Laboratory Practices (GLP), or Good Clinical Practices (GCP). The laboratory and workforce training facility is located on the MWSU campus and offers comprehensive courses in all necessary skill sets in both a classroom and real world environment. MTC granted \$175,000 to assist in the establishment of this comprehensive workforce training center. Grant funds were used to acquire equipment, lab supplies, hardware and casework for the training laboratory to meet the growing skilled workforce demands of the animal health industry. Below is a picture of a wet lab located in the Institute for Industrial and Applied Life Sciences.

Grant Award Recipient: Missouri Western State University

Amount of Grant Award: \$175,000

Award Date: Grant award executed in March 2008 and all funds awarded.

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Photo courtesy of the Institute for Industrial and Applied Life Sciences.

Missouri Power Resource Center/Missouri Center for Advanced Power (MoCAP)

In conjunction with the University of Missouri-Columbia, the University of Missouri-Rolla, Missouri State University and Missouri Southern State University, MTC is helping to lay the groundwork for a power resource center in Joplin, Missouri. MoCAP has partnered with industry leading Missouri companies, such as Eagle Picher, Inc., focused on cutting-edge technology related to power and next-generation batteries. Areas of emphasis will include nano-technology, nano-materials, and micro devices. Applications for these technologies span a vast range of increasingly important uses – from space travel to nuclear power to “green” automobiles. The MTC granted MoCAP \$200,000 for costs associated with the planning and development of this project as well as associated programs at partnering universities. Located on the campus of MSSU, MoCAP will develop educational opportunities to train students in research and development of advanced power system technology while supporting the growth of the power system manufacturing sector of Missouri.

During March through May of 2009, the architectural plans were developed to remodel the old crime laboratory in the Mills Anderson Justice Center on the MSSU campus and the mechanical engineer worked to identify power requirements and distribution necessary to support the lab and equipment. Progress was made on the request for quotes for the laboratory equipment in June and July and funds are being expended on the project.

Grant Award Recipient: Missouri Center for Advanced Power

Amount of Grant Award: \$200,000

Award Date: Grant awarded June 2008.

Missouri Technology Incentive Program

MTC was allocated \$1.25 million to be utilized for loans and grants to high-tech small businesses located in Missouri. These funds will be invested through the Missouri Technology Incentive Program (MOTIP) in companies seeking federal Small Business Innovation Research (SBIR) Program and Small Business Technology Transfer (STTR) Program grant funds. A portion of these funds is leveraged for Missouri small businesses and universities to assist in the development of grant proposals to federal agencies commonly referred to as "Phase Zero" grants. The MTC provides funding to two programs: (1) MOFAST Phase 0 grants up to \$5,000 to assist companies submitting a SBIR or STTR grant; and (2) a Commercialization Assistance Program (CAP) loan to companies who have been awarded a Phase I grant and need assistance with the development of the commercialization plan as part of their Phase II application for federal funding. The CAP loan provides up to \$15,000 for the purpose of hiring a consultant to assist with the writing of the commercialization plan with the goal of a better success rate for Missouri with Phase II awards.

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The first 15 months of the MOTIP Phase 0 program were successful in filling the SBIR submissions pipeline; and it will take another 9 to 12 months to determine the success of the submissions. As of July 2009, 116 proposals were received and 85 were awarded the MOTIP Phase 0 totaling approximately \$425,000. The program has been successful in reaching out to multiple regions of the state which may not have been aware of the program.

Grant Award Recipient: University of Missouri/MOFAST

Amount of Grant Award: \$500,000 (reimbursable grant)

Award Date: March 2008

Missouri Venture Partners

Formerly MTC Entrepreneur Pipeline Program/Plant and Ag Biotech Seed Capital Co-Investment Fund

LCDI allocated \$3 million for seed capital co-investment and the establishment of an entrepreneurial pipeline. This funding will result in the formation of the Missouri Venture Partners (MVP), a program designed to fill a void of seed capital to invest in high growth technology companies and to leverage additional funding for the creation of a larger seed capital investment fund. The program is also designed to encourage the mining of discoveries and innovations at Missouri institutions with the assistance of hands on development by the contracted fund manager and their team – Finistere Ventures, LLC. Another goal for the fund manager is accessing complementary technologies across the globe which could be combined with Missouri derived discoveries that drive new company formation and collaboration.

The Missouri Venture Partners is proposed to be a \$25 million, active early-stage seed venture fund catalyzed with \$3 million from the MTC. The remaining funds will be raised from institutional investors and private/corporate investors by the contracted fund manager.

Once a marketable technology is recognized, the MVP team will initiate typical business start-up processes such as intellectual property due diligence, market analysis, legal business formation, and institutional licensing. Once the decision is made to launch the business venture, the MVP fund, possibly in syndication with angel investment groups, will finance the final start-up costs and initial business operations. Once the technology has been proven, MVP will help identify and recruit a qualified management team, at which point the venture will be prepared for traditional venture capital financing and will proceed through the traditional technology company start-up processes.

Award Recipient: Finistere Ventures, LLC

Amount of Award: \$250,000 consulting agreement for promotion/fundraising phase

Award Date: Consulting agreement executed September 1, 2008

Intellectual Property Management Fund

\$1.1 million of LCDI funds was allocated to MTC for the establishment of an intellectual property management fund to help Missouri start-up companies and universities protect the intellectual property rights for promising new technologies. These funds will help alleviate a significant bottleneck which exists in small company formation due to a lack of financial resources for filing appropriate patent protections. Once more technologies are protected through patents and other legal means, more venture capital and seed funding will flow to Missouri start-ups, stimulating economic growth across the state. Funds are available to Missouri-based start-up companies that are recommended by Missouri Innovation Centers, Missouri Small Business Development Centers, and University technology transfer offices. Up to \$15,000 for the preparation, filing, and prosecution of a patent application is provided to eligible applicants through the fund

MTC contracts with the Intellectual Property and Business Formation Clinic at the Washington University School of Law to perform an initial review and screening of the technologies applying for IPMF funding. A process has been established for handling applications through the website www.moipmf.org.

Award Recipients: Two loans totaling \$15,000 were approved in May 2009.

Medical Device Innovation Program

The opportunities for increasing Missouri's expertise in the development of medical device innovations and start-up companies related to these discoveries can be found all across Missouri. This exciting field represents a significant opportunity for increasing deal flow and start-up companies in Missouri. Part of the focus for this program is targeted toward mentoring student fellows through the process of successfully bringing new surgical devices and engineered health care solutions to the health care market. The program facilitates the production of high-quality, innovative professionals who have the desire and knowledge to continue commercializing new

medical technologies. The Medical Device Innovation Program funded at \$350,000 is designed to enhance collaboration between physicians, engineers, and business people in a manner that creates new entrepreneurial opportunities. Under the initial grant award three Biodesign Fellows were funded one each from the School of Medicine, School of Engineering, and School of Business. Funds were used to support stipends and benefits for the program fellows and guest lecturers and related educational training materials. Phase I is defined as Clinical Immersion where the Fellows gain experience by shadowing physicians, observing in the operating room and interviewing and interacting with physicians to determine any needs they may have to assist with surgical procedures. The Fellows then move to Phase 2, Product Design, which consists of the identification and design of surgical instruments or products and development of a prototype for testing. Finally, the Fellows move to Phase 3, Business Development, to determine which products may be viable for commercialization activities and the development of a business plan. Phase I resulted in 15 Invention Disclosures, two provisional patents filed, five Nondisclosure Agreements signed with industry and one limited liability company spin-off.

Grant Award Recipient: MU Biodesign and Innovation Program; University of Missouri-Columbia

Amount of Award: Phase I totaled \$100,000 and Phase II awarded \$200,000

Award Date: Phase I grant awarded June 2008 with all funds awarded. Phase II grant awarded on June 26, 2009.

St. Louis Information Technology (IT) Initiative

\$1 million in funding was provided to leverage local dollars invested in ongoing efforts to make St. Louis a national leader in the creation of information technology companies and employment opportunities through the collaborative efforts of the University of Missouri-St. Louis High Performance Computing Center and Innovate St. Louis. This consortium comprised of business, civic, university leaders, and the St. Louis Regional Chamber and Growth Association is working to enhance the region's entrepreneurial environment and spur innovation and entrepreneurship in the information technology (IT) sector.

UMSL used the grants funds to establish a High Performance Computing (HPC) Center in the newly established "IT Enterprises (ITe)." The state-of-the-art HPC Center (see pictures on page 8) staffed by experienced Ph.D. computer scientists and graduate students, provides an excellent opportunity to conduct cutting edge research and enable the Center to provide R&D assistance to startup companies housed in ITe. The MTC grant was leveraged by other sources of funding for ITe including grants from the U.S. Small Business Administration (\$989,477), Ameren CDC (\$530,000) and the University of Missouri. The total project costs for ITe is nearly \$5 million. Innovate St. Louis used the grant funds for the purpose of funding the establishment of a comprehensive, regional hybrid business incubator without walls known as ITEN. In the most recent report to MTC, ITEN assisted approximately 92 companies. More information about ITEN can be found at www.itenstl.org.

Grant Award Recipients: University of Missouri-St. Louis and Innovate St. Louis

Amount of Awards: \$850,000 to UMSL and \$150,000 to Innovate St. Louis

Award Dates: Grants were executed in the spring of 2008 and all funds awarded.



Photo courtesy of ITe



Photo courtesy of ITe

Opportunity Fund for Bioenergy Research Center

\$3.25 million in funds has been allocated to help enhance Missouri's competitive position when seeking major federal research facilities, such as a U.S Department of Energy Bioenergy Research Center or the U.S. Department of Homeland Security's National Bio and Agro-Defense Facility. These types of major projects are at various stages of consideration and development around the state in the field of agricultural research. They are of a sufficient size and scale that they would make a large and lasting impact on Missouri's innovation economy for years to come. The Opportunity Fund will provide our state with a competitive advantage when competing for landmark research centers.

Status of Projects: Opportunities are being considered.

Missouri Open Innovation Network

\$250,000 has been allocated to MTC to implement a knowledge-sharing system that: collects innovation-related data from Missouri organizations focused on research and development (R&D); supports Missouri-based collaborations through information sharing; and catalogues intellectual assets for global R&D organizations considering investing R&D dollars in Missouri. This network will result in more grants and contracts won due to teams built using the network.

more start-ups and business expansions resulting from investments facilitated by the network, and an increase in licensing activity through use of the system by prospective investors. The primary access point for communication and innovation sharing will be an innovative and user-friendly web-based portal that will be linked to institutions and companies throughout the state.

Funding in this category was allocated to create a statewide Missouri Sourcelink website based on the award-winning KC Sourcelink program. KC Sourcelink provides a web-based portal for start-up companies and budding entrepreneurs, connecting them with the appropriate resources available among the public sector service providers designed to assist them. MTC will integrate these new web based resources with a newly redesigned website that displays the best of Missouri's growing high-tech research endeavors and start-up companies. The MTC approved an additional grant in June 2009 to further develop the MOsourceLink system to make visible and improve access to networks that support early-stage technology commercialization activities, forging connections between emerging and existing small businesses and the scientific community in Missouri.

Grant Award Recipient: University of Missouri-Kansas City

Amount of Award: Phase I awarded at \$90,000 and Phase II awarded at \$120,000

Award Date: Phase I awarded June 2008; Phase II awarded June 2009

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www.mosourcelink.com

Emerging Firms Mapping Project

With a small development grant provided by the Hawthorn Foundation, Express Academic Services in cooperation with researchers from the Economics and Management of Agrobiotechnology Center both in the College of Agriculture Food and Natural Resources at University of Missouri-Columbia have developed a web portal for Missouri's Life Sciences industry—the Missouri Life Sciences Project (MLSP). The Project seeks to connect companies, private and public research institutions, government agencies and other organizations in ways that expand Missouri's robust Life Sciences industry. The project expanded the functionality of the MLSP both as a showcase of the industry and for recruitment. The project revised the current life science database with appropriate information that will allow geo-referenced mapping. See www.missourilifesciences.org.

Grant Award Recipient: The Economics and Management of Agrobiotechnology Center (EMAC), part of the Division of Applied Social Sciences under the University of Missouri Sponsored Programs.

Amount of Award: \$35,000 (reimbursable grant)

Award Date: Grant awarded March 2007 and all funds awarded.

High-Tech Marketing Promotions Fund

This matching marketing program is designed to encourage Missouri companies designated within DED's targeted high-tech industries to seek out new international markets, with targeted export opportunities in the European, Asian, and Australian marketplaces. Two small grant awards were made early in the project to support two conferences in Missouri; the Missouri Biotechnology Association (MoBIO) Life Sciences Summit (\$10,000) and the Missouri Enterprise Technology Association's Leap-It Forward Conference (\$5,000). In June 2008 a grant was approved to MoBIO for the purpose of aggressively marketing the biosciences industry in Missouri by funding several targeted international biotech conferences. Marketing the Missouri biosciences industry at targeted international biotech conferences will draw attention to the bioscience resources and capabilities available in Missouri and further the development of the industry in Missouri.

Grant Award Recipients: Missouri Biotechnology Association - \$10,000
Missouri Enterprise Technology Association - \$5,000
Missouri Biotechnology Association - \$324,500

Award Date: Grant awarded to MoBIO June 2008 as a reimbursable grant for the costs of events.

Below is a list of events for 2009:

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- International BIO 2009 in Atlanta, Georgia (May 2009)
- BIO Israel BIOMed Conference in Tel Aviv (May 2009)
- Drug Information Association (DIA) Annual Meeting and International Conference in San Diego (June 2009)
- Bio Japan World Business Forum in Yokohama (October 2009)
- Advanced Medical Technology Association (AdvaMed) in Washington, D.C. (October 2009)



Photo courtesy of MoBIO.

Missouri is "Built for Biotechnology" In the Georgia World Congress Center at the BIO International Convention, May 18-21, 2009. Missouri's pavilion served as the gathering place and "home base" for Missouri attendees and interested partners. There were multiple opportunities to showcase Missouri companies to the more than 21,000 international attendees, and our presence provided an impressive display of the biotech strengths of the Midwest.

Left: Jason Hall, MTC Executive Director, visits with Dr. Dan Getman, President of the Kansas City Area Life Sciences Institute.



Photo courtesy of MoBIO.

Collaboration and Interdisciplinary Degree Programs for Masters and Ph.D. Students

This project facilitates increased collaboration between degree programs at Missouri universities and other public and private entities. The MTC had an opportunity to support a company, Media Convergence Group, Inc. (MCG), in partnership with the MU Journalism School to equip a state of the art newsroom. MCG is a global multi-perspective news enterprise whose founders relocated from San Francisco, California to Columbia, Missouri to partner with the University of Missouri, particularly the MU School of Journalism as the chief collaborator for their media convergence sequence. MCG is also taking advantage of relationships with the business school, engineering school, and language specialists from the college of arts and sciences to fully develop the ability to synthesize and present the world's news perspectives in a high value online video format that is extremely valuable in the burgeoning online video advertising market. Since July 1, 2008, MCG has raised over \$700,000 in equity investments with plans to raise an additional \$1.5 to \$2 million.

Funding Recipient: Media Convergence Group, Inc. (MCG)

Award Amount: \$250,000 loan agreement.

Award Date: Loan agreement executed in July 2008.

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AgBiotech Outreach and Education Program

The Missouri Biotechnology Association (MoBIO), a nonprofit trade association dedicated to the development and growth of the Missouri biotechnology and biomedical industry, and SCOPE (Science and Citizens Organized for Purpose and Exploration), a not-for profit focused on connecting the public to opportunities, from education to workforce in science and technology are partnering in order to implement a statewide county Agbiotech outreach and education program. This program will provide enhanced biotechnology learning opportunities to students in Missouri as well as outreach efforts across the state of Missouri to local citizens to educate and accelerate support of the life science industry. The project supports and drives the state's localized awareness of opportunities across the broad spectrum of the life sciences, with a special focus on bioenergy. The project seeks to provide students with the opportunity to experience biotechnology and bioenergy with hands-on interactions and presentations.

Missouri Plant Science Center in Mexico, Missouri/ Research Alliance of Missouri

Grant Award Recipient: Missouri Biotechnology Association (MoBIO)
Amount of Award: \$125,000
Award Date: Grant awarded August 2009.

AgBiotech Company Recruitment Fund

These funds are used to recruit and retain agbiotech companies in the state of Missouri. The purpose of the fund is to make Missouri a more attractive home for these agbiotech companies. The total amount of funds under this category is \$3,350,000.

MTC provided a grant totaling \$250,000 to the Institute of Industrial and Applied Life Sciences in St. Joseph to purchase equipment for the laboratory build-out at the Kit Bond Science and Technology Center. The build-out resulted in the relocation of an animal health company, Imulan Bio Therapeutics, from Phoenix, Arizona to St. Joseph, Missouri to be the first tenant of the incubator. Two additional projects were approved by the MTC and agreements are currently pending.

Grant Award Recipient: Institute of Industrial and Applied Life Sciences
Award Amount: \$250,000
Award Date: Grant executed in October 2008.

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Missouri Plant Science Center in Mexico, Missouri

MTC anticipates breaking ground on the Missouri Plant Science Center in Mexico, Missouri in 2009. The Missouri Plant Science Center will be a state-of-the-art facility for applied research, technology commercialization and pilot scale production. It will be the only facility of its kind in the United States. The Center is a joint venture between the Missouri Technology Corporation, the University of Missouri and the City of Mexico. The facility will offer lab and office space in addition to a unique pilot scale manufacturing facility which will be available on a fee-for-use basis to both tenants of the Center and outside companies. The Center will also provide the opportunity for collaboration between companies. The vision for the Center is to develop a hub of innovation and production for functional food, nutraceuticals and other plant-sourced products. Future plans include developing a plant science commercial park adjacent to the Center. MTC received an appropriation of \$2.5 million for the planning, design, renovation, equipment purchase and construction of the facility.

Research Alliance of Missouri (RAM)

The Research Alliance of Missouri is constituted as a non-incorporated team of the chief research officers of each of the state's colleges, universities, and non-profit research institutions that expend not less than \$10 million for scientific research on an annual basis. RAM's day-to-day operations are performed by the executive director of MTC who assists the organization in furtherance of its two main goals: increasing the number of multi-university research proposals and awards; and improving collaboration between the research and business communities. The RAM board of directors meets on a regular basis and in the past the organization sponsored several research seminars designed to enhance opportunities for research collaborations and Missouri-based technology businesses. A list of RAM members can be found on page 12 of this report.

The University Technology Park at Fort Leonard Wood/ Administration for the Life Sciences Research Trust Fund

The University of Missouri
Technology Park at
Fort Leonard Wood



Photo courtesy of <http://mrpbusinesscenter.org>

In 1999, MTC advocated for a state investment in a new technology park to be located at Fort Leonard Wood, Missouri's largest and most significant military installation. In response to this request, the Governor and General Assembly appropriated \$2 million to MTC for this purpose. During this critical time, the university matched the state's investment with \$2 million of its own funds and took on the role of managing partner. Thus, a highly successful partnership between MTC, the University of Missouri System, and Fort Leonard Wood was born with MTC retaining a 45 percent interest in the venture and the university owning the remainder.

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Today, Building One at the University of Missouri Technology Park at Fort Leonard Wood is fully utilized and is producing a positive cash flow. Because of the proven demand for space to accommodate organizations engaged in strategic partnerships with the military, MTC and the University of Missouri worked together to secure funding to construct a second building that could meet existing market demand. That building was funded by a loan from the University of Missouri to the partnership. Construction began in the fall of 2004 and the facility opened for business in May of 2005. MTC has agreed to utilize positive cash flow from Building One to retire debt on the second building over a ten-year period.

With two buildings at full capacity and having validated the demand for space, the University and MTC are actively working to market the technology park for further development and make full use of the unique enhanced use lease, the only private technology park located on an active military installation in the United States. MTC is working with the University of Missouri to explore an expansion of this highly successful tech park.

Administration of the Life Sciences Research Trust Fund (LSTF)

At the invitation of the Missouri Life Sciences Research board of directors, MTC has assumed responsibility for the administration of the LSTF. Key responsibilities include drafting the request for proposals (RFPs) for the research and commercialization projects, contracting for scientific peer review services, and working in cooperation with the four centers for excellence. While the Life Sciences Research Board retains all decision-making authority, MTC plays an important role in ensuring that these dollars are invested wisely by managing the grant-making and monitoring process in a professional, seamless, informative and organized fashion.

Technology Commercialization Partnership

In 2007, House Bill 7 appropriated \$13.45 million to the Life Sciences Trust Fund in the areas of bioenergy, plant science and animal health and nutrition. Fourteen grants were awarded in the research and commercialization areas totaling \$13.1 million.

In 2008, the General Assembly and Governor approved \$21 million to the Life Sciences Trust Fund (\$13.4 million available for new grants with the remainder going to fund on-going projects approved by the Life Science Research Board). The language included an expansion into medical devices, biomaterials and composite research, diagnostics, nanotechnology related to drug development and delivery, clinical imaging and information technology related to human health. A total of eighteen grants totaling \$13.1 million were awarded in the various funding categories.

In 2009, the General Assembly and Governor appropriated \$13.3 million to the Life Sciences Trust Fund. The Life Sciences Research Board is currently in the peer review phase of the project with the goal of awarding the grants in early December 2009.

Details on the 2007 and 2008 process and the awarded grants can be found in the 2008 Life Sciences Trust Fund Spending Plan.

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Technology Commercialization Partnerships

MTC has worked closely with the University of Missouri Extension and the University of Missouri Economic Development office to develop an aggressive and comprehensive approach toward high-tech business growth in order to increase the university's role as an important economic driver and better aligning the public sector service providers assisting start ups in Missouri. Specifically, MTC has focused on working with MU Extension to develop a more effective collaboration between the Small Business & Technology Development Centers, Innovation Centers, and University Technology Transfer Offices. MTC also works closely with the Department of Economic Development Industry Specialists.

Missouri Innovation Centers

MTC oversees the Missouri Innovation Center program, which is funded through the Missouri Department of Economic Development in cooperation with MTC. An innovation center is a state-sponsored, not-for-profit organization that helps entrepreneurs bring new technologies to the marketplace. There are currently ten innovation centers located throughout the state (see Appendix E for map). Missouri's innovation centers were created to "provide assistance to individuals and business organizations during the early stages of the development of new technology-based business ventures." Although many of the innovation centers work closely with the University-run Small Business & Technology Development Centers and other business assistance programs, Missouri innovation centers are more targeted in their client base and focus on high-growth advanced technology companies. Each innovation center capitalizes on its regional assets and local partnerships to maximize services and resources for clients.

Since opening in 1998, the Center for Emerging Technologies has been a major contributor to the economic growth of St. Louis. CET, an incubator for life sciences companies, reported providing services and training to over 370 clients and creating or retaining 90 jobs for their clients. In

CENTER NAME	LOCATION	EXECUTIVE DIRECTOR
Center for Emerging Technologies	St. Louis	Marcia Mellitz
Missouri Enterprise	Rolla	Rick Prugh
Missouri Research Corporation	Cape Girardeau	James Stapleton (interim)
Missouri Innovation Center	Columbia	Jake Halliday
Newman Business and Technology Innovation Center	Joplin	Steve Russell
Springfield Innovations, Inc.	Springfield	Allen Kunkel
Brush Creek Enterprise Center/Kansas City SourceLink	Kansas City	Maria Meyers
Missouri Rural Enterprise and Innovation Center	Kirksville	Charlene Boyes
Institute for Entrepreneur Studies and Development	Warrensburg	Mark Manley
Institute for Industrial and Applied Life Sciences	St. Joseph	Gary Clapp

FY2009 client revenues were reported at \$8.7 million with clients raising almost \$30 million in investment and research/grant support.

Missouri Enterprise, manages the innovation center in Rolla and also the University of Missouri Technology Park at Fort Leonard Wood. They use a statewide approach combined with its integration with the NIST Manufacturing Extension Partnership program to make it the only center focused in Missouri on manufacturing innovation. In Fiscal Year 2009, Missouri Enterprise worked with more than 50 clients and reported close to \$7 million in client revenues and over \$40 million in client research and federal grants awarded. Missouri Enterprise reported creating or retaining over 200 jobs in the region. Missouri Enterprise also works closely with the Missouri University of Science and Technology to provide research and general business counseling to start-up technology-based business ventures and entrepreneurs.

The Missouri Research Corporation (MRC) is located on the campus of Southeast Missouri State University in Cape Girardeau and fills a huge need in historically the most economically challenged portion of the state. They reported to work with over 400 clients over the course of FY2009 resulting in over \$700,000 client revenues, \$930,000 client investment raised and over 50 jobs created or retained. MRC also operates a 6,000 sq. ft. incubator and reports having four tenants with plans to fill the incubator to capacity in FY2010. Southeast Missouri State University is developing a Technology Village that is an exciting new 400-acre mixed-use park embracing the local agricultural of southeast Missouri while emphasizing development of plant science and environmentally friendly technologies.

Columbia is home to the Missouri Innovation Center (MIC) whose goal is to support the creation of high-growth enterprises in mid-Missouri. MIC has a formal agreement with the University of Missouri-Columbia to for operation of the MU Life Sciences Incubator at Monsanto Place. The incubator is a 33,000 sq. ft. facility with capacity for nine biomedical labs, six engineering labs, office space and shared amenities. Currently four companies are located in the incubator including two companies that were relocated from other states. MIC provided assistance to over 120 clients in FY2009 who reported approximately \$5 million in the sales of products or product licensing and were successful in raising close to \$1 million in private equity and over another \$1 million in debt/grant support. MIC also reported the creation of 23 new jobs and the retention of 141 jobs from their clients.

The Joseph Newman Innovation Center in Joplin reported another successful year in FY2009, working with over 600 companies and individuals in offering several educational training programs and providing on-site consulting. The Newman Center also operates an incubator and currently has eight tenants. In FY2009, their clients reported creating 40 new jobs with approximately \$1.3 million in revenues and \$4 million in research grant support. One major project for the Newman Innovation Center in FY2009 was the Missouri Center for Advanced Power, which brings together the Newman Center, state, local industry and university resources to research and develop cutting edge power systems and a program to educate and train a highly skilled workforce.

The Brush Creek Enterprise Center contracted with the University of Missouri-Kansas City and specifically KCSourceLink to operate the innovation center in Kansas City during FY2009. KCSourceLink reported worked with over 450 clients in FY2009 through on-site consulting and educational training programs. The center was successful in reporting client revenues totaling \$10 million and close to \$10 million in equity investment, debt and grant support. They also reported the creation of 204 new jobs for their clients. KCSourceLink made progress in the implementation of the "Whiteboard to Boardroom" program to develop a university-wide process for identifying, compiling and evaluating technology transfer opportunities. Through the KCSourceLink and MOSourceLink web sites, over 1,700 people were connected to the network of organizations who support business development in the Kansas City region and across the state of Missouri.

The Missouri Rural Enterprise & Innovation Center in Kirksville serves as a catalyst for economic development, with particular emphasis on start-up businesses and established firms that are involved in the life sciences and information technology. They also focus on the needs of rural communities and rural business enterprises across the state with specific emphasis on the northern half of the state. They work closely and collaborate with the City of Kirksville and Truman State University. One highlight from MREIC in FY2009 was the launch of their website at www.mreicenter.org and also the collaboration with the Northeast Regional Planning Commission to conceive and initiate the operation of a prototype Innovators' Café in Memphis, Missouri, as an entrepreneurial resource counseling and training center. MREIC was successful in working with 542 clients, of which 34 received specific assistance. They reported over \$1.1 million in client revenues and 10 new jobs created in FY2009.

Springfield Innovation, Inc. focuses on assisting technology-based entrepreneurs and businesses and maintains a close relationship with Missouri State University. Springfield Innovation, Inc. is part of the Jordan Valley Innovation Center to allow collaboration with the Center for Applied Science and Engineering (CASE) and the Center for Biomedical and Life Sciences (CBLS) as needed. In FY2009, Springfield Innovation reported working with approximately 24 clients and creating 16 new jobs. These clients reported receiving over \$500,000 in research and grant support.

Since opening in 2007, the Entrepreneurial Innovation and Development Corporation (EIDC) in Warrensburg works as a catalyst for entrepreneurs by partnering with the local Small Business Technology Development Center, area economic development organizations and chambers to generate almost \$34 million in economic impact. In FY2009, EIDC provided educational training to almost 900 businesses and individuals and consulted directly with over 100 clients. These

clients reported the creation 13 new jobs and the retention of 22 jobs. Client revenues were reported totaling \$7.4 million with clients raising a little over \$5.1 million in investment and research and grant support.

The Institute for Industrial and Applied Life Sciences (IIALS) in St. Joseph was designated as a Missouri Innovation Center by the MTC in April 2008. The primary focus of the IIALS is science and technology as it relates to the long history of animal health and nutrition in the northwest region of Missouri. IIALS reported working with over 50 clients in FY2009. Of those, four contributed to the annual reporting with the creation of 5 new jobs; total revenues over \$135,000; and investments and other financing at \$2.7 million.

Missouri Federal and State Technology Partnership (MOFAST)

The MOFAST program is administered through the University of Missouri and provides counselors located in Columbia, St. Louis, Kansas City and Rolla/Springfield to assist startup and small Missouri technology businesses to seek out, apply for and win government research and development awards to the small businesses. Awards of these federal grants will help maintain the technology and proceeds from its commercialization in Missouri. The MOFAST counselors are an important component of MTC's Missouri Technology Incentive Program (MOTIP).

Small Business & Technology Development Centers (SBTDCs)

SBTDCs offer comprehensive and individualized business management counseling to small business owners and entrepreneurs. The centers have a staff of skilled counselors with experience in areas that are highly important to new entrepreneurs such as marketing, sales, accounting, financial analysis, cost control systems, and personnel management. They also encourage and enhance technology research and development, technology transfer, and technology deployment.

Technology Transfer Offices

Technology Transfer Offices for public and private universities are important partners in the development of startup companies and increasing deal flow. The better universities are at efficiently handling their intellectual property, then the quicker researchers and start up companies can take their innovations and discoveries to market. MTC is very supportive of recent efforts to change the technology transfer policies at the University of Missouri system which allows for each campus to control its own intellectual property decisions with as little interference possible from the office of general counsel. The change in measuring success by the number of new startups rather than strictly licensing income is having a dramatic impact on early stage deal flow with more startups being created.

Missouri Department of Economic Development (DED)

Industry Specialists

DED has eight industry sector specialists whose primary function is to advise the department's director and business retention and recruitment staff on various industry-related matters. Four of the industry sectors identified as part of this effort are technology related – life sciences, defense-homeland security, energy, and information technology. While these individuals serve as informal advisors to MTC, MTC's executive director also serves on their respective advisory boards. This symbiotic relationship is representative of MTC's collaborative approach toward economic development.

Appendix A

MTC 2009 Meeting Schedule

During 2009, the MTC Board held numerous meetings in order to fulfill its obligations and the expectations of the Department of Economic Development and other policymaker partners.

The meeting schedule was as follows:

MTC BOARD MEETINGS:

- January 23, 2009 Teleconference
- February 13, 2009 Teleconference
- April 24, 2009 Columbia
- June 26, 2009 Kansas City
- September 29, 2009 Teleconference
- October 26, 2009 St. Louis

MTC EXECUTIVE COMMITTEE:

- January 21, 2009 Teleconference
- February 24, 2009 Teleconference
- April 13, 2009 Columbia
- May 1, 2009 Teleconference
- May 14, 2009 Teleconference
- June 15, 2009 Teleconference
- June 25, 2009 Teleconference
- July 22, 2009 Teleconference
- August 7, 2009 Teleconference
- September 4, 2009 Teleconference
- September 17, 2009 Teleconference
- October 19, 2009 Teleconference

MTC AUDIT COMMITTEE:

- March 4, 2009 Teleconference
- April 22, 2009 Columbia
- October 23, 2009 Teleconference

MTC INNOVATION CENTER COMMITTEE:

- March 6, 2009 Columbia

Missouri Technology Corporation Board of Directors

Joseph G. Bannister, Chair Daniel P. Mehan, Vice Chair Frank Stokes, Secretary-Treasurer

Dr. Jim Baker
Vice President for Research and Development
Missouri State University
Springfield, MO

Mr. Joseph G. Bannister
President and CEO
JGB Advisors, LLC
St. Louis, MO

Mr. Daniel P. Devers
Partner
Shook Hardy & Bacon LLP
Kansas City, MO

Ms. Victoria A. Gonzalez
President and CEO
Nidus Center for Scientific Enterprise
St. Louis, MO

Senator John Griesheimer
Missouri State Senate
Washington, MO

Representative Steve Hobbs
Missouri House of Representatives
Mexico, MO

Mr. Garry Kemp
Executive Vice President
Greater Kansas City Building and Trades Council,
AFL-CIO
Independence, MO

Mr. Daniel P. Mehan
President and CEO
Missouri Chamber of Commerce & Industry
Jefferson City, MO

Mr. Donn Rubin
Coalition for Plant and Life Sciences
St. Louis, MO

Mr. Gregory A. Steinhoff
Boone County National Bank
Columbia, MO

Mr. Frank Stokes
CEO
Innovate St. Louis
St. Louis, MO

Mr. Michael D. Wetle
St. Louis, MO

Delegate for President of University of Missouri
Dr. Michael F. Nichols
Vice President for Research and Economic Dev.
University of Missouri
Columbia, MO

Department of Economic Development
Ms. Kathleen Steele Danner
Director
Jefferson City, MO

1 Vacancy

Ex-officio Members:

**The Fort Leonard Wood Garrison Commander and two RAM members were elected by the members to serve in an ex-officio capacity.*

Col. Charles A. Williams
Garrison Commander at Fort Leonard Wood

Krishna Krishnamurthy, Ph.D.
Vice Provost for Research
Missouri University of Science & Technology
Rolla, MO

Nasser Arshadi, Ph.D.
Vice Chancellor for Research
University of Missouri-St. Louis
St. Louis, MO

Appendix C

Research Alliance of Missouri Membership List

Dr. Krishna Krishnamurthy, Chair Ms. Cindy Kiel, Vice Chair Dr. Nasser Arshadi, Treasurer

Nasser Arshadi, Ph.D.
Vice Chancellor for Research
University of Missouri-St. Louis
St. Louis, MO

Maria DiStefano, Ph.D.
Associate Vice President for Academic Affairs
Dean of the Graduate School
Truman State University
Kirksville, MO

Rob Duncan, Ph.D.
Vice Chancellor for Research
Office of Research
University of Missouri-Columbia
Columbia, MO

Alan G. Glaros, Ph.D.
Associate Dean of Basic Medical Sciences
KC University of Medicine & Biosciences
Kansas City, MO

Karla Goldstein
Director of Public/Governmental Affairs
Donald Danforth Plant Sciences Center
St. Louis, MO

Marie Jennings
Public Relations Specialist
Stowers Institute for Medical Research
Kansas City, MO

Jane C. Johnson
Director, Office of Research Support
A.T. Still University of Health Sciences
Kirksville, MO

Cindy Kiel
Assistant Vice Chancellor for Research Services
Washington University
St. Louis, MO

Krishna Krishnamurthy, Ph.D.
Vice Provost for Research
Office of Sponsored Programs
Missouri University of Science & Technology
Rolla, MO

Allen Kunkel
Assistant Vice President for Economic Development
Missouri State University
Springfield, MO

William T. Morgan, Ph.D.
Interim Vice Provost for Research
Professor Emeritus, Biological Sciences
Kansas City, MO

Michael F. Nichols, Ph.D.
Vice President for Research and Economic Dev.
University of Missouri
Columbia, MO

Evan Kharasch, M.D., Ph.D.
Interim Vice Chancellor for Research
Washington University
St. Louis, MO

Victoria Steel, Ph.D.
Director of Sponsored Programs
University of Central Missouri
Warrensburg, MO

Raymond Tait, Ph.D.
Interim Vice Provost for Research
St. Louis University
St. Louis, MO

Frank Veeman, Ed.D
Regional Director
Small Business Development Center
Northwest Missouri State University
Maryville, MO

**Missouri Technology Corporation
Balance Sheet**

As of September 30, 2009

	Total
ASSETS	
Current Assets	
Bank Accounts	
Central Bank Checking	11,405,150.84
Total Bank Accounts	\$ 11,405,150.84
Other Current Assets	
N/R - Cars 'N' Kids, Inc.	15,000.00
N/R - Cervimark, LLC	50,000.00
N/R - Innovaprep	15,000.00
N/R - Media Convergence Group	229,166.66
N/R - VirRx, Inc.	50,000.00
Total Other Current Assets	\$ 359,166.66
Total Current Assets	\$ 11,764,317.50
Fixed Assets	
Office Equipment	15,279.74
Accumulated Depreciation	(12,130.33)
Total Office Equipment	\$ 3,149.41
Total Fixed Assets	\$ 3,149.41
Other Assets	
Investment in UM/FLW Technology	1,493,622.00
Total Other Assets	\$ 1,493,622.00
TOTAL ASSETS	\$ 13,261,088.91

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LIABILITIES AND EQUITY

Liabilities	
Current Liabilities	
Other Current Liabilities	
Contractual Committed Funds	385,046.49
Payroll Liabilities	900.00
Total Other Current Liabilities	\$ 385,946.49
Total Current Liabilities	\$ 385,946.49
Total Liabilities	\$ 385,946.49
Equity	
Retained Earnings	13,293,206.60
Net Income	(418,064.18)
Total Equity	\$ 12,875,142.42
TOTAL LIABILITIES AND EQUITY	\$ 13,261,088.91

**Missouri Technology Corporation
Profit & Loss**

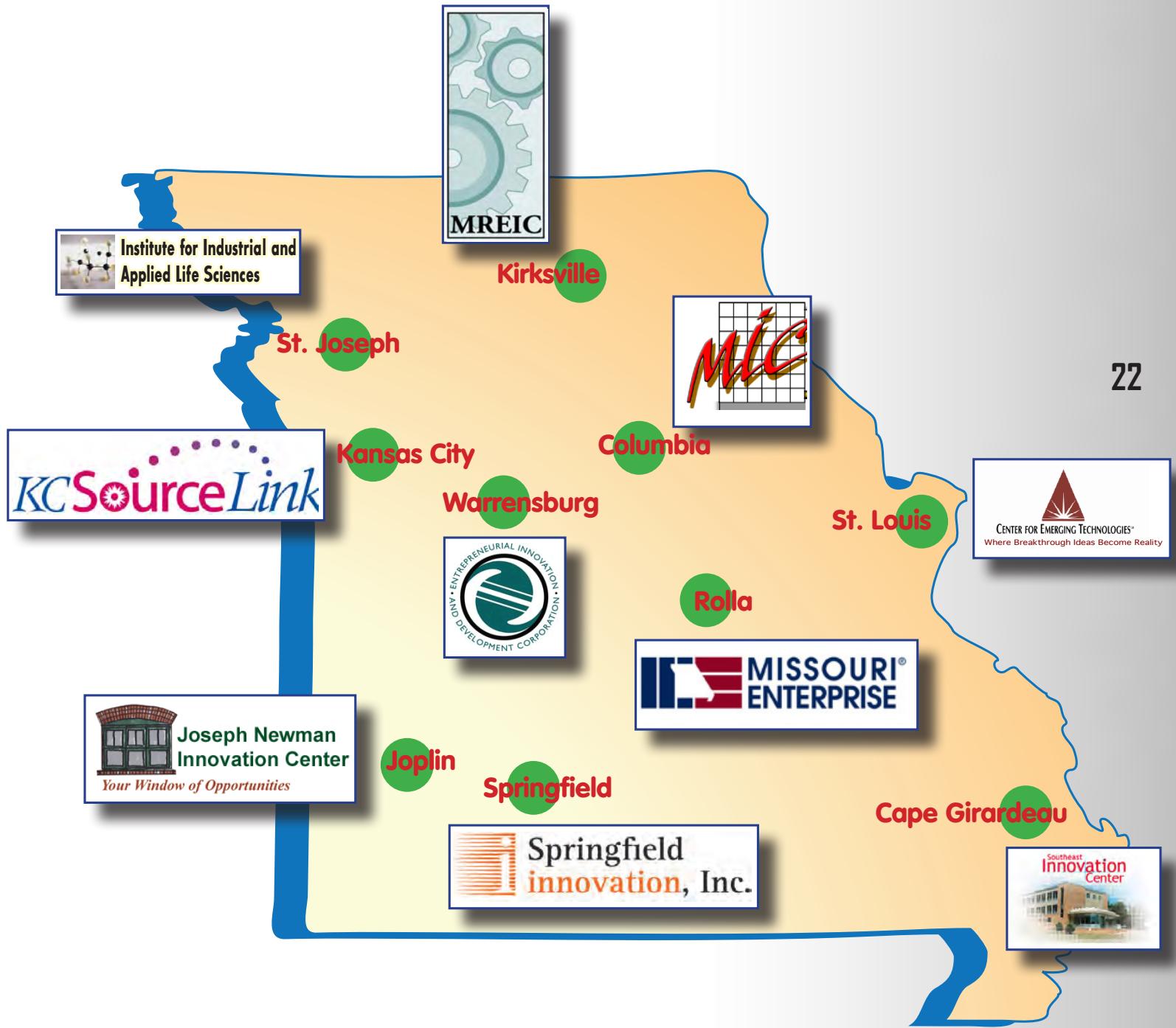
October 2008 - September 2009

	Total
INCOME	
Administrative Income	266,000.00
Total Contributions Income	\$ 266,000.00
Total Income	\$ 266,000.00
EXPENSES	
Automobile Expense	441.76
Conference - Expense	20,000.00
Depreciation Expense	2,632.80
Dues and Subscriptions	1,000.00
Insurance	3,729.90
Licenses and Permits	15.00
Meetings	1,200.14
Miscellaneous	70.00
Office Supplies	1,087.10
Payroll Expenses	(37.00)
Payroll Tax	7,640.83
Postage and Delivery	3,697.58
Printing and Reproduction	899.20
Professional Fees	50,000.00
Accounting	12,679.13
Consulting	141,648.20
Legal Fees	381,919.00
Total Professional Fees	\$ 586,246.33
Program Expense	1,935,701.27
Supplies	95.48
Telephone	5,992.06
TRAVEL	
Meals	661.40
Travel	33,975.97
Total Travel	\$ 34,637.37
Wages	101,460.27
Total Expenses	\$ 2,706,510.09
Net Operating Income	\$ (2,440,510.09)
OTHER INCOME	
Interest Income	88,441.00
Total Other Income	\$ 88,441.00
Net Other Income	\$ 88,441.00
Net Income	\$ (2,352,069.09)

Thursday, Oct 08, 2009 - Cash Basis

Profit and Loss Statement is for the period of October 1, 2008 through September 30, 2009, which crosses two fiscal years; therefore Net Income is reported as portion of Retained Earnings on Balance Sheet.

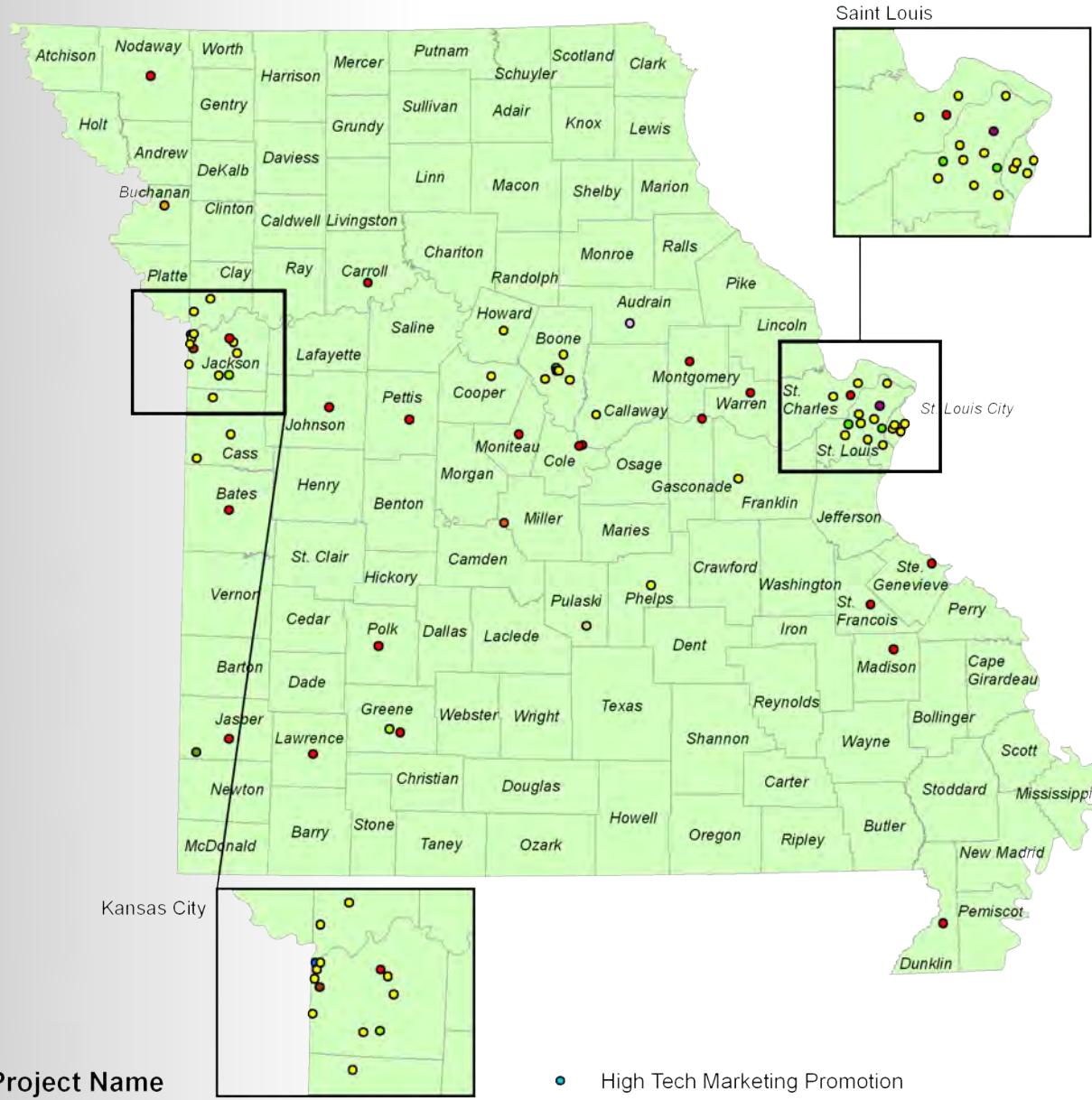
Missouri Innovation Centers



Appendix F

Missouri Technology Corporation Project Locations

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Project Name

- AgBiotech Outreach and Education Program
- AgBiotech Recruitment Fund
- Angel Investor Network
- Animal Health Workforce Development Initiative
- Animal Health and Nutrition Center
- Coll. And Interdisciplinary Degree
- Emerging Firms Mapping
- Missouri Plant Science Center
- High Tech Marketing Promotion
- High Tech Small Business Bridge Loan
- High Tech Small Business Phase 0 Grant Program
- Intellectual Property Management
- MO Open Innovation Network
- MO Power Resource Center
- Medical Device Innovation Program
- St. Louis IT Initiative
- Fort Wood Tech Park



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